

## **Full Moon Days and Crime: Is there any association?**

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**Jay Karan<sup>1</sup>**

**Deepak Saxena<sup>2</sup>**

**Hitesh Shah<sup>3</sup>**

### **Abstract**

It is been reported that full moon is associated with increase in crimes. Aim of this study was to see whether there is any connection between full moon and crimes reported in medico legal register of tertiary health care centre? All the crime related events were noted from central medico-legal register from the record section of hospital in a predesigned proforma. Crime events were compared between full moon days and non full moon days. Crimes were also compared after stratification on the basis of days of week. Events reported as frequencies. Frequencies of full moon days and non full moon days were compared by Chi-Square test. There was no significant difference of crimes events on full moon days and non full moon days ( $p = 0.07$ ). On stratification there was no difference between full moon day of week and same non full moon day of week except on Wednesday. It was concluded that crimes events are not related with full moon days.

### **Introduction**

The influence of full moon on human mind is a mystery. Many studies attempted to explore the effect of full moon on positive and negative facets of human behavior.

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1 [drjaykaran@yahoo.co.in](mailto:drjaykaran@yahoo.co.in)

2 [ddeepak@gmail.com](mailto:ddeepak@gmail.com)

3 [pali6gadh@yahoo.com](mailto:pali6gadh@yahoo.com)

Positive association is reported between full moon and aggression (1), unintentional poisoning (2), absenteeism (3) etc. In a study done by Thakur et al (1984) it was observed that full moon was associated with increase in crime rate in three police stations of India.(4) These observations are widely challenged by other studies done in this field.(5,6,7). Effect of full moon on crime is still not explored much after the study done by Thakur et al. (4) So we thought it is worthwhile to explore the effect of full moon on crimes reported in a tertiary care hospital.

### **Materials and Methods**

This study is done at New Civil Hospital, Govt. Medical College, Surat which is a tertiary care hospital in Gujarat. After the crime usually patients come to NCH for treatment of there injuries. A central register (MLC register) is maintained for recording of all these events on daily bases. After the year end this register is stored at record section. After getting permission of Institutional Ethics Committee, one of us (JK) went to record section of New Civil Hospital (NCH), Surat. Numbers of crimes reported on each day (1 January 2009 to 30 December 2009) were noted from Medico Legal Case (MLC) register in a predesigned proforma. Frequency of daily crimes reported were analyzed in relation to the presence or absence of a full moon, stratified by day of the week so that comparisons between full moon and nonfull moon days were for the equivalent day of the week. Number of crimes reported during full moons occurring on, for example, a Sunday was compared with number of crimes reported for all other Sundays.

### **Statistics**

Events were expressed as frequencies. Difference of events between full moon days and non full moon days were measured by Chi Square test.

### **Results**

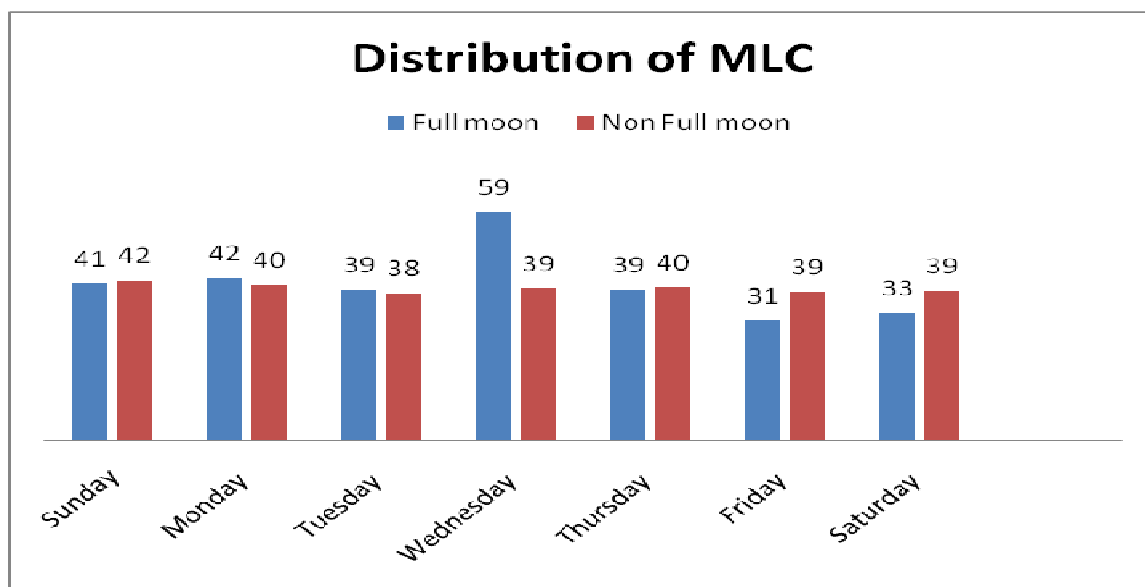
On comparison between total crimes reported on full moon days and non full moon days it was observed that there was no statistically significant difference ( $p=0.07$ ). (**Table 1**)

**Table 1.** Crimes events on full moon days and non full moon days

Days	Full moon	Non Full moon
Sunday	41	42
Monday	42	40
Tuesday	39	38
Wednesday	59	39
Thursday	39	40
Friday	31	39
Saturday	33	39

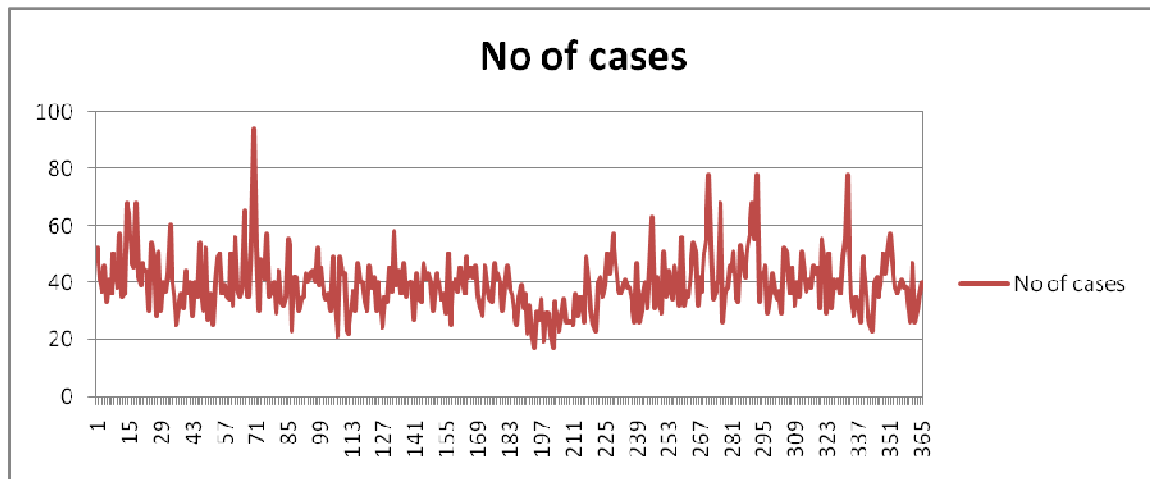
Chi Square test P = 0.07

When daily crimes were stratified by days of week and compared, crime rate was almost equal in most of the days except on wednesday where crime rate was more in full moon day. **(Figure 1)**



**Figure 1.** Frequencies of daily crimes stratified by days of week

On plotting frequency of crimes against days of year it was found that there were only four peaks and only one peak was associated with full moon. **(Figure 2)**



**Figure 2.** No. of crimes reported per day of year 2009

### Discussion

The word “lunacy” is originated from the “Luna” – roman goddess of the moon with the belief that power of moon can cause disorders of mind. (8) It is been postulated that this change of behavior may be attributed to “Human tidal waves” because of gravitational pull of moon. (4,9) According to some studies this change in behavior may also be because of release of melatonin and neurohormones in the brain because of influence of moon. (10,11) But this study found no influence of full moon on crimes reported in hospital. Our findings are supported by some other studies done in this field where authors found so association of full moon day with violent behavior. (12,13) But our findings are not supported by many studies which shows positive association between full moon days and violent behavior, crimes etc. (14,15,16) But validity of many studies which shows positive association is questionable. In a study it was observed that many studies supporting the association between full moon and crimes has statistical flaws. (17). In another study it was found that alleged relations between phases of the moon and violent behavior can be traced to faulty analyses of data, a failure to take other (e.g., weekly) cycles into account, and a willingness to accept any departure from chance as evidence for a lunar effect. (18)

In this study we observed that crime incidence was very high on one particular full moon day. This was the reason for high crime on wednesday (figure 1 and 2). The reason for this may be the occasion of “Holi festival” on that particular day as crime rate sometime increase in festivals like holi.

Very few studies explored the effect of full moon on crimes reported in medico legal registers in hospitals. In a study done by Thakur CP et al (1987) it was found that full moon days are associated with more medico legal deaths. (19) We included all cases of medico legal crimes not only the deaths and this is the strength of our study. We compared the frequency of crime reported on full moon of some specific day of week with the crimes reported on the same day without full moon. This is also strength of our study as weekly cycle taken care off.

So on the basis of this study it can be concluded that there is no connection of full moon days and crimes.

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